

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 78-19

NPDES NO. CA0005061

WASTE DISCHARGE REQUIREMENTS FOR:

CHEVRON CHEMICAL COMPANY
ORTHO DIVISION, RICHMOND PLANT
RICHMOND, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The Board, on February 15, 1977, adopted Order No. 77-7 prescribing waste discharge requirements for the Chevron Chemical Company, Ortho Division, Richmond Plant, (hereinafter called the discharger). The discharger has asked the Board to reissue that Order, and to revise its requirements, by letters of July 1, and November 7, 1977, and subsequent meetings staff. The discharger has filed a report of waste discharge dated September 9, 1977.
2. The discharger manufactures and distributes fertilizers which contain various combinations of nitrogen, phosphorous, and potash compounds, and a variety of pesticides, fungicides, and herbicides. These contain various toxic substances, including organophosphates, carbamates, organochlorine compounds, and heavy metals including copper, lead, and zinc. The majority of the wastes generated on the site are either incinerated, disposed of in zero-discharge ponds, or discharged to the sanitary sewer system. The following wastes containing pollutants are discharged to Hermans Slough Castro Creek, and San Pablo Bay, waters of the United States according to the discharger:

Waste 001 is an indeterminate amount of polluted stormwater runoff originating from areas of the Pesticide and Chemical Processing Plant which contain contaminants of pesticide, herbicide, or liquid fertilizer origin. Such areas are transfer stations, process areas, storage and loading areas, and contaminated roof tops.

Waste 002 is an indeterminate amount of polluted stormwater runoff originating from areas of the Difolatan Plant which contain contaminants of fungicide origin. Such areas are transfer stations, process areas, storage and loading areas, and contaminated roof tops.

Wastes 001 and 002 are collected in a stormwater surge pond located along the east side of Castro Street and are discharged to waters of the State only during periods of high intensity rainfall. Discharge is made to a drainage ditch, on the east side of Castro Street, which is tributary to Hermans Slough and San Pablo Bay.

Waste 003 is an indeterminate amount of polluted stormwater runoff originating from areas of the Fertilizer Plant which contain pollutants of nitrogen, phosphorous, and potassium fertilizers. These areas are transfer stations, process areas, storage and loading areas, and contaminated roof tops. Waste 003 is currently discharged into Chevron's waste evaporation ponds. Waste 003 is discharged to waters of the State only during periods of high intensity rainfall, when discharge is made to a drainage ditch, on the west side of Castro Street, which is tributary to Hermans Slough and San Pablo Bay.

Waste 004 is a 264,000 gallons per day blowdown stream from the incinerator at the difolatan plant. It is characterized as a 10% brine solution and contains incinerated pollutants from the difolatan and orthene plant and various waste streams from the formulation and packaging plants. Some heavy metals are used in the processes, and various raw materials used contain arsenic and zinc. These metals are detectable in the waste stream. Waste 004 is currently discharged to the Richmond municipal treatment plant, but the City has asked that it be removed because the discharger's effluent high salt content impairs the feasibility of reclaiming the treated municipal wastewater for use. The high salt content of Waste 004 renders it toxic to fishlife, but this can be mitigated by reducing the salt concentration. Therefore, the discharger proposes to dilute Waste 004 by a ratio of 360:1 by discharging it into the Chevron USA Refinery 250' channel where it will be mixed with about 90 mgd of once through cooling waters and about 12.5 mgd of refinery process wastewater prior to discharge to Castro Creek about 500 yards from the creeks confluence with Castro Cove, an embayment of San Pablo Bay.

3. Sub-toxic concentrations of arsenic and zinc are present in the effluent and are to be investigated with view to minimize their concentrations. A report of such investigation is due April 15, 1973.
4. The Board, in April 1975, adopted a Water Quality Control Plan. The Plan contains water quality objectives for San Pablo Bay and its tributaries. The Plan includes the following prohibitions:

"...It shall be prohibited to discharge:

1. Any wastewater which has particular characteristics of concern to beneficial uses:

... ..

- b. At any point at which the wastewater does not receive a minimum initial dilution of at least 10:1.
- c. Into any nontidal water or dead-end slough or slough or similar confined water areas or their immediate tributaries. ..."

Waste 004 is discharged to a cooling water channel which is tributary to confined waters similar to a dead-end slough.

The Basin Plan provides for consideration of exceptions to the discharge prohibitions described above for discharges

- a) having a high initial dilution,
- b) where an inordinate burden would be placed on the discharger relative to beneficial uses protected, and
- c) when an equivalent level of environmental protection can be achieved by alternate means.

High initial dilution will be provided by dilution with refinery cooling water.

The discharger has not demonstrated that an inordinate burden relative to beneficial uses protected would be experienced if required to locate the discharge in deep water. Connection to the planned West County Agency outfall which will discharge at a point 9400 feet offshore of Pt. Richmond is one alternative method of meeting the deepwater discharge requirement, but it can not be adequately assessed until plans for wastewater reclamation of West County Agency dischargers are more specifically defined. The outfall and interceptor are scheduled for completion in mid-1980. Therefore, a study evaluating feasibility of locating the discharge in deep water, will be required by June 31, 1980.

Adequate assessment of equivalent level of environmental protection cannot be made until the San Pablo Sanitary District effluent has been removed from Castro Creek (scheduled for 1980) and until sufficient time has passed to allow biological recovery to occur in receiving water and sediments. A reasonable date for demonstration of equivalent level of environmental protection would be December 31, 1983, or three years following removal of the Sanitary District discharge, whichever is later. A similar demonstration is to be required of Chevron USA which currently discharges to Castro Creek. Therefore, the demonstration by Chevron Chemical may rely heavily on data provided by the Chevron USA study.

5. The beneficial uses of San Pablo Bay and its tributaries are:

- a. Recreation
- b. Fish migration and habitat
- c. Habitat and resting for waterfowl and migratory birds
- d. Industrial water supply
- e. Esthetic enjoyment
- f. Navigation
- g. Shellfish habitat

6. Effluent limitation and toxic and pretreatment effluent standards established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.
7. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
8. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
9. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code in accordance with Water Code Section 13389.
10. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator, U. S. Environmental Protection Agency, has no objections.

IT IS HEREBY ORDERED that Chevron Chemical Company, Ortho Division, Richmond Plant, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The discharge of wastes 001 and 002 to waters of the State is prohibited except as provided under the following conditions:

During any wet season in which a rainfall event occurs which yields a total precipitation with a magnitude greater than the mean maximum rainfall event an amount of wastes 001 and 002 may be discharged equal to that attributable to the precipitation occurring in excess of the mean maximum rainfall event. The term, "mean maximum rainfall event" is defined herein to mean the arithmetic average of the annual maximum rainfall events for any given duration of rainfall. This shall be derived from National Weather Service data or other sources acceptable to the Executive Officer. The mean maximum rainfall event has a recurrence interval of approximately 2.3 years.

2. The discharge of waste 003 to waters of the State is prohibited except as provided by the following:

During any wet season in which a rainfall event occurs which yields a total precipitation over a twenty-four hour period of a magnitude that has a probability of recurring only once in ten years, an amount of waste may be discharged equal to that attributable to the precipitation occurring in excess of the ten year, twenty-four hour storm.

3. Discharge to Castro Creek or Castro Cove is prohibited after December 31, 1980, unless the discharger can demonstrate that the high toxicity of its undiluted effluent is due solely to high salt content and that this toxicity is eliminated upon dilution. If such a demonstration is not made, the Board will consider adoption of a Time Schedule Order for compliance with this prohibition.

Specifications, acceptable to the Executive Officer, for the studies necessary to make this demonstration shall be developed by the discharger in consultation with staff of the Regional Board and Department of Fish and Game.

4. Discharge to Castro Creek and Castro Cove is prohibited after December 31, 1983, or three years following removal of the San Pablo Sanitary District discharge whichever is later, unless the discharger can demonstrate that an inordinate burden would be placed on the discharger relative to beneficial uses protected and that an equivalent level of environmental protection is being provided. The discharger may rely heavily on studies performed by Chevron USA-Richmond Refinery to make the demonstration of equivalent protection.
5. The seepage or percolation of waste from any of the discharger's sumps or ponds to surface or groundwater is prohibited.

B. Effluent Limitations

1. The discharge of Waste 004 containing constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>30 Day Average</u>	<u>Maximum Daily</u>
a. TOC	lbs/day	52	116
	kg/day	23	53
b. BOD (5 day @ 20°C)	lbs/day	80	338
	kg/day	18	154
c. Total Suspended Solids	lbs/day	83	125
	kg/day	38	57
d. Phenol	lb/day	.13	.36
	kg/day	.06	.16
e. Total pesticides*	lb/day	.22	.45
	kg/day	.10	.20
f. Ammonia as N	lb/day	63	94
	kg/day	28	43

g. Settleable Solids ml/l-hr 0.1 0.2

*Total pesticides shall be determined by measuring difolatan, orthene, paraquat, toxaphene, capton and chlordane representing over 90% of all production.

2. The combined discharge of waste 004 and refinery effluent shall meet the following limit of quality:

Toxicity:

The survival of an acceptable test organism in 96-hour bioassays of the effluent shall achieve a median of 90% survival for three consecutive samples and a 90 percentile value of not less than 70% survival for 10 consecutive samples.

3. The combined discharge of waste 004 and refinery effluent shall not have a pH of less than 6.5 nor more than 8.5.
4. The daily discharge rate is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate} = \frac{8.34}{N} \sum_{i=1}^N Q_i C_i$$

in which N is the number of samples analyzed in any calendar day. Q_i and C_i are the flow rate (MGD) and the constituent concentration (mg/l) respectively, which are associated with each of the N grab samples which may be taken in any calendar day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

5. The 30-day average values for discharge rate or concentration shall be the arithmetic average of all the daily values calculated using the results of analyses of all samples collected during any 30-day period. If fewer than four samples are collected and analyzed during any 30 consecutive calendar period, compliance with the 30-day average specifications shall be determined.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

- e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:
 - a. Dissolved Oxygen 5.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
 - b. Dissolved sulfide 0.1 mg/l maximum.
 - c. pH Variation from natural ambient pH:
 - (1) Not more than 0.5 pH units in waters near discharge points for Wastes 001 002, and 003.
 - (2) Not more than 0.2 pH units in waters near the discharge point for Waste 004.
 - d. Un-ionized Annual median: 0.025 mg/l
 Ammonia (as N) Maximum: 0.4 mg/l.
 3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. Neither the treatment nor the discharge of pollutants shall create a nuisance as defined in the California Water Code.
2. A minimum freeboard of two feet shall be maintained in all waste containment, evaporation, and treatment ponds at all times.
3. The Discharge Prohibitions contained in Section A of this Order shall not apply to stormwater runoff from areas for which the discharger can demonstrate to the satisfaction of the Board that:

- (a) Pesticides, chemicals, difolatan, and fertilizers are not manufactured, stored, or transported over the area at any time; and
 - (b) Opportunity does not exist for pesticide, chemicals, difolatan or fertilizers to be released onto the area as a result of accidental spillage; and
 - (c) The area does not accumulate pesticide, chemicals, difolatan or fertilizer particulates as a result of airborne transport and deposition; and
 - (d) The area has been cleaned of any pollutants which may have been deposited on that area as a result of past pesticide, chemical, difolatan or fertilizer manufacturing activities.
4. The discharger shall comply with all sections of this Order upon its adoption except for Discharge Prohibitions A.3 and A.4.
 5. The discharger shall submit to the Executive Officer by April 15, 1978, a revision or addendum to the discharger's report submitted March 14, 1977, entitled "Spill Prevention Control and Countermeasures Plan" to reflect any changes in manufacturing operations or pollution control since that time.
 6. The discharger shall analyze the feasibility of locating the discharge in deep water according to the following schedule:

	<u>Compliance</u>	<u>Submit Report</u>
a) Prepare initial study	June 1, 1978	June 15, 1978
b) Prepare final report	June 1, 1980	June 15, 1980

7. The discharger shall comply with Discharge Prohibition A.3 according to the following time schedule:

	<u>Compliance</u>	<u>Submit Report</u>
a) Prepare specification for studies	April 15, 1978	April 30, 1978
b) Prepare Progress Reports	Dec. 15, 1978 Dec. 15, 1979	Dec. 31, 1978
c) Prepare Final Report	Dec. 15, 1980	Dec. 31, 1980

8. The discharger shall comply with discharge prohibition A.4 according to the following time schedule:

	<u>Compliance</u>	<u>Submit Report</u>
a) Prepare impact analysis of discharge	Dec. 15, 1980	Dec. 31, 1980
b) Prepare final report demonstrating equivalent level of environmental protection	Dec. 15, 1983*	Dec. 31, 1983*

*Or three years following removal of San Pablo Sanitary District discharge, whichever is later.

9. The discharger shall submit to the Executive Officer by April 15, 1978, and engineering study on minimizing the concentrations of arsenic and zinc in waste 004. This report shall also include the feasibility of implementation dollar costs, and time schedules necessary for implementation.
10. The discharger shall provide an alternative power source for the stormwater surge pumps during power outages.
11. This permit may be modified, or, alternatively, revoked and reissued, to comply with any applicable effluent limitation issued pursuant to the order the United States District Court for the District of Columbia issued on June 8, 1976, in Natural Resources Defense Council, Inc. et. al. v. Russell E. Train, 8 ERC 2120 (D.D.C. 1976), if the effluent limitation so issued:
 - (a) is different in conditions or more stringent than any effluent limitation in the permit; or
 - (b) controls any pollutant not limited in the permit.
12. This Board's Order No. 77-7 is hereby rescinded.
13. This Order includes items 1, 3, 5, and 7 of the attached "Reporting Requirements," dated August 8, 1973.
14. This Order includes items 1, 2, 4, 5, 6, 7, 8, 9, and 10 of the attached "Standard Provisions," dated November 20, 1974.
15. This Order expires on March 21, 1983, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
16. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 21, 1978.

FRED H. DIERKER
Executive Officer

Attachments:

Reporting Requirements 8/8/73
Standard Provisions 11/20/74
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

Chevron Chemical Company, Ortho Division

Richmond Plant

Richmond, Contra Costa County

NPDES NO. CA 0005061

ORDER NO. 78-19

CONSISTS OF

PART A dated January 1978

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the outfall from the Storm water surge pond containing Wastes 001 and 002 between the point of discharge and the point at which all waste tributary to that outfall is present.
E-003	At any point in the outfall from the Fertilizer Plant containing waste 003 between the point of discharge and the point at which all waste tributary to the outfall is present.
E-004	At any point in the outfall from the incinerator containing Waste 004 between the point where it is mixed with the cooling water and the point at which all wastewater from the incinerator is present.
E-005	At any point in the cooling water channel such that sample is characteristic of cooling waters used for dilution of Waste 004.
E-006	At any point immediately above the Chevron USA 250 foot channel dam such that the sample is representative of the mixture of wastes discharged to Castro Creek.

B. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-001	At a point in the drainage ditch, immediately west of Castro Street culvert.
C-002	At a point in the drainage ditch, located immediately upstream of the tide gates adjoining Hermans Slough.
C-A1	At a point in Castro Creek, located at the confluence with the 250-foot channel.
C-A2	At a point in Castro Creek, located 250 feet southeasterly of Station C-A1.

<u>Station</u>	<u>Description</u>
C-20d	At a point in San Pablo Bay, located in the entrance channel to Castro Creek, within the limits of the southwesterly quarter of grid square No. 20, per attached drawing.
C-23d	At a point in San Pablo Bay, located within the limits of the southwesterly quarter of grid No. 23 per attached drawing.
C-28d	At a point in San Pablo Bay, located in the entrance channel to Castro Creek, within the limits of the southwesterly quarter of grid square No. 28, per attached drawing.
C-31b	At a point in San Pablo Bay, located within the limits of the northeasterly quarter of grid square No. 31, per attached drawing.
C-47a	At a point in San Pablo Bay, located within the limits of the northwesterly quarter of grid square No. 47, per attached drawing.
C-48d	At a point in San Pablo Bay, located within the limits of the southwesterly quarter of grid square No. 48, per attached drawing.

C. SEDIMENTS (not used)

D. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
P-1	At the point of discharge of Waste 001 and 002 to the drainage ditch tributary to Herman's Slough.
P-3	At the point of discharge of Waste 003 to the drainage ditch tributary to Herman's Slough.
L-1 thru L-'n'	Located along the perimeter levees of each evaporation pond at equidistant intervals not to exceed 100 feet. (A sketch showing the locations of these stations will accompany each report.)

E. RAINFALL

<u>Station</u>	<u>Description</u>
R-1	The nearest official recording National Weather Service rainfall station or other station acceptable to the Executive Officer.

F. MISCELLANEOUS REPORTING INSTRUCTIONS

1. The discharger shall submit a sketch showing the locations of all ponds, treatment facilities, and points of waste discharge. This shall be updated by the discharger as changes occur.
2. For any discharge at E-001 and E-003 sufficient rainfall data in a format acceptable to the Executive Officer shall be submitted by the discharger showing at least hourly rainfall rates to define a rainfall event that allows discharge, e.g. Wastes discharging at E-001 will require rainfall data be submitted sufficient to define that a rainfall event exceeding a "mean rainfall event" has occurred, and for wastes discharging at E-003, rainfall data shall be submitted of at least 24 continuous hours to define that a rainfall event exceeding a "10 year, 24 hour" rainfall event has occurred.
3. To avoid duplication of data, the discharger may utilize data reported by Chevron USA for submittal, provided that both Chevron USA and Chevron Chemical Company officially certify its accuracy.
4. Compliance with toxicity limit B.2 for waste 004 after mixing with refinery effluent and as discharged shall be determined at station B-006. Toxicity of waste 004 after mixing with cooling water shall be determined using a flow proportional mixture of waste 004 from station E-004 and refinery cooling water from station E-005. The median tolerance limit (TL_m) for waste 004 at station E-004 shall be determined using refinery cooling waters from station E-005 as diluent.
5. Discharge of wastes 001, 002, or 003 shall be reported to the Board by telephone immediately following the commencement of discharge.

II. SCHEDULE OF SAMPLING AND ANALYSIS

- A. The schedule of sampling and analysis shall be that given as Table I.

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 78-19.
2. Does not include the following paragraphs of Part A:
C-3; C-4; C-5:b,c; D-1, E-4

3. Is hereby ordered effective on the date shown below.
4. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Attachment:
Table I
Map

Date Ordered _____

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001		E-003		E-004		E-006		C-001 C-002	L	R	P-1 P-3	
TYPE OF SAMPLE	C	G	C	G	C	G	C	G	G	O	O	O	
Un-ionized ammonia (mg/l)									E				
Nickel (mg/l & kg/day)													
Zinc (mg/l & kg/day)		E			W								
PHENOLIC COMPOUNDS (mg/l & kg/day)					Y								
All Applicable Standard Observations									E	M		E	
Rainfall (depth & duration)											ED		
Total Pesticides (mg/l & kg/day)					W								
Total Organic Carbon (mg/l)		E			W								
Chlordane (mg/l)		E											
Toxaphene (mg/l)		E											
Difolatan (mg/l)		E											
Phenol (mg/l and kg/day) (5)					2/M								
Benzene (3) (4) (mg/l & kg/day)		E			2/M								
Toluene (3) (4) (mg/l & kg/day)		E			2/M								
Carbon Tetrachloride (3) (mg/l & kg/day)					2/M								
Chloroform (3) (mg/l & kg/day)					2/M								
Methyl Chloride (3) (mg/l & kg/day)					2/M								
Hexachlorocyclopentadiene (mg/l & kg/day) (3)					2/M								
2-4-Dinitrophenol (3) (mg/l & kg/day)					2/M								
N-nitrosodi-n-propylamine (mg/l & kg/day) (3)					2/M								
Lindane (3) (4) (mg/l & kg/day)		E											
Sevin (3) (4) (mg/l & kg/day)		E											
BHC (3) (4) (mg/l & kg/day)		E											
Tri-chloroethylene (3) (4) mg/l & kg/day)		E			2/M								
Methylene Chloride (3) (4) (mg/l & kg/day)		E			2/M								

TABLE I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001		E-003		E-004		E-006		C-001 C-002	L	R	P-1 P-3	
TYPE OF SAMPLE	C	G	C	G	C-24	G	C-24	G	G	O	O	O	
Flow Rate (mgd)	E ⁽¹⁾		E ⁽¹⁾		D								
BOD, 5--day, 20° C, or COD (mg/l & kg/day)					W								
Chlorine Residual & Dosage (mg/l & kg/day)													
Settleable Matter (ml/1-hr. & cu. ft./day)						W							
Total Suspended Matter (mg/l & kg/day)				E	W								
Oil & Grease (mg/l & kg/day)													
Coliform (Total or Fecal) (MPN/100 ml) per req't													
Fish Toxicity, 96-hr. TL ₅₀ % Survival in undiluted waste		E		E	M		M ⁽²⁾						
Ammonia Nitrogen (mg/l & kg/day)				E	W								
Nitrate Nitrogen (mg/l & kg/day)				E	Y								
Nitrite Nitrogen (mg/l & kg/day)					Y								
Total Organic Nitrogen (mg/l & kg/day)				E	Y								
Total Phosphate (mg/l & kg/day)				E	Y								
Turbidity (Jackson Turbidity Units)													
pH (units)		E		E		cont		cont	E				
Dissolved Oxygen (mg/l and % Saturation)									E				
Temperature (°C)						cont		cont					
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)									E				
Arsenic (mg/l & kg/day)		E			W								
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)		E			Y								
Copper (mg/l & kg/day)					Y								
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & kg/day)													

TABLE I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station			C-A	C-A1	C-A2	C-20d	C-23a	C-28d	C-31b	C-47a	C-48d		
TYPE OF SAMPLE			G	G	G	G	G	G	G	G	G		
Flow Rate (mgd)													
BOD, 5--day, 20° C, or COD (mg/l & kg/day)													
Chlorine Residual & Dosage (mg/l & kg/day)													
Settleable Matter (ml/1-hr. & cu. ft./day)													
Total Suspended Matter (mg/l & kg/day)													
Oil & Grease (mg/l & kg/day)													
Coliform (Total or Fecal) (MPN/100 ml) per req't													
Fish Toxicity, 96-hr. TL ₅₀ % Survival in undiluted waste													
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)				M	M		M						
pH (units)				M	M	M	M	M	M	M	M		
Dissolved Oxygen (mg/l and % Saturation)				M	M	M	M	M	M	M	M		
Temperature (°C)				M	M	M	M	M	M	M	M		
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO < 5.0 mg/l) Dissolved (mg/l)				M	M		M						
Arsenic (mg/l & kg/day)													
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)													
Copper (mg/l & kg/day)													
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & kg/day)													

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station			C-A	C-A1	C-A2	C-20d	C-23d	C-28d	C-31b	C-47a	C-48d	All B	All P
TYPE OF SAMPLE			G	G	G	G	G	G	G	G	G		
Mercury (mg/l & kg/day)													
Nickel (mg/l & kg/day)													
Zinc (mg/l & kg/day)													
PHENOLIC COMPOUNDS (mg/l & kg/day)													
All Applicable Standard Observations			M	M	M	M	M	M	M	M	M	2/Y	E
Bottom Sediment Analyses and Observations													
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)													
Hexavalent Chromium (mg/l & kg/day)													
COD (mg/l & kg/day)													
Un-ionized ammonia as N (mg/l)			M	M		M							
Total Organic Carbon (mg/l & kg/day)													
Total Pesticides (mg/l & kg/day)													

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
 C-24 = composite sample - 24-hour
 C-X = composite sample - X hours
 (used when discharge does not
 continue for 24-hour period)
 Cont = continuous sampling
 DI = depth-integrated sample
 BS = bottom sediment sample
 O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
 A = treatment facility influent stations
 E = waste effluent stations
 C = receiving water stations
 P = treatment facilities perimeter stations
 L = basin and/or pond levee stations
 B = bottom sediment stations
 G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurrence
 H = once each hour
 D = once each day
 W = once each week
 M = once each month
 Y = once each year

2/H = twice per hour
 2/W = 2 days per week
 5/W = 5 days per week
 2/M = 2 days per month
 2/Y = once in March and
 once in September
 Q = quarterly, once in
 March, June, Sept.
 and December

2H = every 2 hours
 2D = every 2 days
 2W = every 2 weeks
 3M = every 3 months
 Cont = continuous

Footnotes

- (1) The volume of wastewater discharged shall be estimated each time a sample is taken.
- (2) See F.4 (Miscellaneous Reporting Instructions).
- (3) Analyses for these parameters shall be conducted at Station #E-004 at the frequency indicated until 6 months data is accumulated.
- (4) Analyses for these parameters shall be conducted at station #E-001 at the frequency indicated until one years data is accumulated.
- (5) Analysis for phenol shall be conducted 2/M until 6 months' data are collected, after which the frequency shall be reduced to 2/Y.

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Chevron Chemical & Chevron USA-Rich.

Reference Map for Self Monitoring Program

DRAWN BY: LPK DATE: 9/3/74 DRWG. NO.

1000 ft grid

Bay

Pablo

San

N

Outfall

